```
============================================================
Sequence Listing was accepted.
If you need help call the Patent Electronic Business Center at (866)
217-9197 (toll free).
Reviewer: markspencer
Timestamp: [year=2010; month=8; day=11; hr=12; min=25; sec=57; ms=122; ]
============================================================
```

Validated By CRFValidator v 1.0.3

Application No: 10553137   Version No: 3.0

Input Set:

Output Set:

Started:	2010-07-29 18:07:52.751
Finished:	2010-07-29 18:07:53.854
Elapsed:	0 hr(s) 0 min(s) 1 sec(s) 103 ms
Total Warnings:	0
Total Errors:	0
No. of SeqIDs Defined:	105
Actual SeqID Count:	105

SEQUENCE LISTING

<110>   Berinstein, Neil
         Gallichan, Scott
         Lovitt, Corey
         Parrington, Mark
         Pedyczak, Artur
         Radvanyi, Laszlo
         Singh-Sandhu, Devender

<120>   Tumor Antigens BFA5 for Prevention and/or Treatment of
         Cancer

<130>   API-03-03-PCT-US

<140>   10553137
<141>   2010-07-29

<150>   PCT/IB2004/001701
<151>   2004-04-15

<150>   US 60/462,945
<151>   2003-04-15

<160>   105

<170>   PatentIn version 3.2

<210>   1
<211>   3846
<212>   DNA
<213>   Homo sapiens

<400>   1
atggtccgga aaaagaaccc ccctctgaga aacgttgcaa gtgaaggcga gggccagatc   60

ctggagccta taggtacaga aagcaaggta tctggaaaga caaagaatt ctctgcagat   120

cagatgtcag aaaatacgga tcagagtgat gctgcagaac taaatcataa ggaggaacat   180

agcttgcatg ttcaagatcc atcttctagc agtaagaagg acttgaaaag cgcagttctg   240

agtgagaagg ctggcttcaa ttatgaaagc cccagtaagg gaggaaactt tccctccttt   300

ccgcatgatg aggtgacaga cagaaatatg ttggctttct catttccagc tgctgggggga   360

gtctgtgagc ccttgaagtc tccgcaaaga gcagaggcag atgaccctca agatatggcc   420

tgcacccct cagggggactc actggagaca aaggaagatc agaagatgtc accaaaggct   480

acagaggaaa cagggcaagc acagagtggt caagccaatt gtcaaggttt gagcccagtt   540

tcagtggcct caaaaaaccc acaagtgcct tcagatggggg gtgtaagact gaataaatcc   600

aaaactgact tactggtgaa tgacaaccca gacccggcac ctctgtctcc agagcttcag   660

```
gactttaaat gcaatatctg tggatatggt tactacggca acgaccccac agatctgatt      720

aagcacttcc gaaagtatca cttaggactg cataaccgca ccaggcaaga tgctgagctg      780

gacagcaaaa tcttggccct tcataacatg gtgcagttca gccattccaa agacttccag      840

aaggtcaacc gttctgtgtt ttctggtgtg ctgcaggaca tcaattcttc aaggcctgtt      900

ttactaaatg ggacctatga tgtgcaggtg acttcaggtg gaacattcat tggcattgga      960

cggaaaacac cagattgcca agggaacacc aagtatttcc gctgtaaatt ctgcaatttc     1020

acttatatgg gcaactcatc caccgaatta gaacaacatt ttcttcagac tcacccaaac     1080

aaaataaaag cttctctccc ctcctctgag gttgcaaaac cttcagagaa aaactctaac     1140

aagtccatcc ctgcacttca atccagtgat tctggagact tgggaaaatg gcaggacaag     1200

ataacagtca aagcaggaga tgacactcct gttgggtact cagtgcccat aaagcccctc     1260

gattcctcta gacaaaatgg tacagaggcc accagttact actggtgtaa attttgtagt     1320

ttcagctgtg agtcatctag ctcacttaaa ctgctagaac attatggcaa gcagcacgga     1380

gcagtgcagt caggcggcct taatccagag ttaaatgata gctttccag gggctctgtc      1440

attaatcaga atgatctagc caaaagttca gaaggagaga caatgaccaa gacagacaag     1500

agctcgagtg gggctaaaaa gaaggacttc tccagcaagg gagccgagga taatatggta     1560

acgagctata attgtcagtt ctgtgacttc cgatattcca aaagccatgg ccctgatgta     1620

attgtagtgg ggccacttct ccgtcattat caacagctcc ataacattca caagtgtacc     1680

attaaacact gtccattctg tcccagagga ctttgcagcc cagaaaagca ccttggagaa     1740

attacttatc cgtttgcttg tagaaaaagt aattgttccc actgtgcact cttgcttctg     1800

cacttgtctc ctggggcggc tggaagctcg cgagtcaaac atcagtgcca tcagtgttca     1860

ttcaccaccc ctgacgtaga tgtactcctc tttcactatg aaagtgtgca tgagtcccaa     1920

gcatcggatg tcaaacaaga agcaaatcac ctgcaaggat cggatgggca gcagtctgtc     1980

aaggaaagca aagaacactc atgtaccaaa tgtgatttta ttacccaagt ggaagaagag     2040

atttcccgac actacaggag agcacacagc tgctacaaat gccgtcagtg cagtttttaca     2100

gctgccgata ctcagtcact actggagcac ttcaacactg ttcactgcca ggaacaggac     2160

atcactacag ccaacggcga agaggacggt catgccatat ccaccatcaa agaggagccc     2220

aaaattgact tcagggtcta caatctgcta actccagact ctaaaatggg agagccagtt     2280

tctgagagtg tggtgaagag agagaagctg gaagagaagg acgggctcaa agagaaagtt     2340
```

```
tggaccgaga gttccagtga tgaccttcgc aatgtgactt ggagaggggc agacatcctg      2400

cggggagtc cgtcatacac ccaagcaagc ctggggctgc tgacgcctgt gtctggcacc       2460

caagagcaga caaagactct aagggatagt cccaatgtgg aggccgccca tctggcgcga      2520

cctatttatg gcttggctgt ggaaaccaag ggattcctgc aggggcgcc agctggcgga       2580

gagaagtctg gggccctccc ccagcagtat cctgcatcgg agaaaacaa gtccaaggat       2640

gaatcccagt ccctgttacg gaggcgtaga ggctccggtg tttttgtgc caattgcctg       2700

accacaaaga cctctctctg gcgaaagaat gcaaatggcg gatatgtatg caacgcgtgt      2760

ggcctctacc agaagcttca ctcgactccc aggcctttaa acatcattaa acaaaacaac      2820

ggtgagcaga ttattaggag gagaacaaga aagcgcctta acccagaggc acttcaggct      2880

gagcagctca caaacagca gaggggcagc aatgaggagc aagtcaatgg aagcccgtta       2940

gagaggaggt cagaagatca tctaactgaa agtcaccaga gagaaattcc actccccagc      3000

ctaagtaaat acgaagccca gggttcattg actaaaagcc attctgctca gcagccagtc      3060

ctggtcagcc aaactctgga tattcacaaa aggatgcaac ctttgcacat tcagataaaa      3120

agtcctcagg aaagtactgg agatccagga aatagttcat ccgtatctga agggaaagga      3180

agttctgaga gaggcagtcc tatagaaaag tacatgagac ctgcgaaaca cccaaattat      3240

tcaccaccag gcagccctat tgaaaagtac cagtacccac tttttggact tcccttgta       3300

cataatgact tccagagtga agctgattgg ctgcggttct ggagtaaata taagctctcc      3360

gttcctggga atccgcacta cttgagtcac gtgcctggcc taccaaatcc ttgccaaaac      3420

tatgtgcctt atcccacctt caatctgcct cctcattttt cagctgttgg atcagacaat      3480

gacattcctc tagatttggc gatcaagcat tccagacctg gccaactgc aaacggtgcc       3540

tccaaggaga aaacgaaggc accaccaaat gtaaaaaatg aaggtccctt gaatgtagta      3600

aaaacagaga aagttgatag aagtactcaa gatgaacttt caacaaaatg tgtgcactgt      3660

ggcattgtct ttctggatga agtgatgtat gctttgcata tgagttgcca tggtgacagt      3720

ggacctttcc agtgcagcat atgccagcat ctttgcacgg acaaatatga cttcacaaca      3780

catatccaga ggggcctgca taggaacaat gcacaagtgg aaaaaaatgg aaaacctaaa      3840

gagtaa                                                                 3846


<210>   2
<211>   1281
<212>   PRT
<213>   Homo sapiens
```

<400> 2

Met Val Arg Lys Lys Asn Pro Pro Leu Arg Asn Val Ala Ser Glu Gly
1   5   10   15

Glu Gly Gln Ile Leu Glu Pro Ile Gly Thr Glu Ser Lys Val Ser Gly
            20   25   30

Lys Asn Lys Glu Phe Ser Ala Asp Gln Met Ser Glu Asn Thr Asp Gln
        35   40   45

Ser Asp Ala Ala Glu Leu Asn His Lys Glu Glu His Ser Leu His Val
        50   55   60

Gln Asp Pro Ser Ser Ser Ser Lys Lys Asp Leu Lys Ser Ala Val Leu
65   70   75   80

Ser Glu Lys Ala Gly Phe Asn Tyr Glu Ser Pro Ser Lys Gly Gly Asn
                85   90   95

Phe Pro Ser Phe Pro His Asp Glu Val Thr Asp Arg Asn Met Leu Ala
            100   105   110

Phe Ser Phe Pro Ala Ala Gly Gly Val Cys Glu Pro Leu Lys Ser Pro
        115   120   125

Gln Arg Ala Glu Ala Asp Asp Pro Gln Asp Met Ala Cys Thr Pro Ser
        130   135   140

Gly Asp Ser Leu Glu Thr Lys Glu Asp Gln Lys Met Ser Pro Lys Ala
145   150   155   160

Thr Glu Glu Thr Gly Gln Ala Gln Ser Gly Gln Ala Asn Cys Gln Gly
                165   170   175

Leu Ser Pro Val Ser Val Ala Ser Lys Asn Pro Gln Val Pro Ser Asp
            180   185   190

Gly Gly Val Arg Leu Asn Lys Ser Lys Thr Asp Leu Leu Val Asn Asp
            195   200   205

Asn Pro Asp Pro Ala Pro Leu Ser Pro Glu Leu Gln Asp Phe Lys Cys
    210   215   220

Asn Ile Cys Gly Tyr Gly Tyr Tyr Gly Asn Asp Pro Thr Asp Leu Ile
225   230   235   240

Lys His Phe Arg Lys Tyr His Leu Gly Leu His Asn Arg Thr Arg Gln
                245   250   255

Asp Ala Glu Leu Asp Ser Lys Ile Leu Ala Leu His Asn Met Val Gln
                260   265   270

Phe Ser His Ser Lys Asp Phe Gln Lys Val Asn Arg Ser Val Phe Ser
        275   280   285

Gly Val Leu Gln Asp Ile Asn Ser Ser Arg Pro Val Leu Leu Asn Gly
        290   295   300

Thr Tyr Asp Val Gln Val Thr Ser Gly Gly Thr Phe Ile Gly Ile Gly
305   310   315   320

Arg Lys Thr Pro Asp Cys Gln Gly Asn Thr Lys Tyr Phe Arg Cys Lys
                325   330   335

Phe Cys Asn Phe Thr Tyr Met Gly Asn Ser Ser Thr Glu Leu Glu Gln
                340   345   350

His Phe Leu Gln Thr His Pro Asn Lys Ile Lys Ala Ser Leu Pro Ser
        355   360   365

Ser Glu Val Ala Lys Pro Ser Glu Lys Asn Ser Asn Lys Ser Ile Pro
        370   375   380

Ala Leu Gln Ser Ser Asp Ser Gly Asp Leu Gly Lys Trp Gln Asp Lys
385   390   395   400

Ile Thr Val Lys Ala Gly Asp Asp Thr Pro Val Gly Tyr Ser Val Pro
                405   410   415

Ile Lys Pro Leu Asp Ser Ser Arg Gln Asn Gly Thr Glu Ala Thr Ser
                420   425   430

Tyr Tyr Trp Cys Lys Phe Cys Ser Phe Ser Cys Glu Ser Ser Ser Ser
        435   440   445

Leu Lys Leu Leu Glu His Tyr Gly Lys Gln His Gly Ala Val Gln Ser
    450   455   460

Gly Gly Leu Asn Pro Glu Leu Asn Asp Lys Leu Ser Arg Gly Ser Val
465   470   475   480

Ile Asn Gln Asn Asp Leu Ala Lys Ser Ser Glu Gly Glu Thr Met Thr
                485   490   495

Lys Thr Asp Lys Ser Ser Ser Gly Ala Lys Lys Lys Asp Phe Ser Ser
                500   505   510

Lys Gly Ala Glu Asp Asn Met Val Thr Ser Tyr Asn Cys Gln Phe Cys
            515   520   525

Asp Phe Arg Tyr Ser Lys Ser His Gly Pro Asp Val Ile Val Val Gly
    530   535   540

Pro Leu Leu Arg His Tyr Gln Gln Leu His Asn Ile His Lys Cys Thr
545   550   555   560

Ile Lys His Cys Pro Phe Cys Pro Arg Gly Leu Cys Ser Pro Glu Lys
                565   570   575

His Leu Gly Glu Ile Thr Tyr Pro Phe Ala Cys Arg Lys Ser Asn Cys
            580   585   590

Ser His Cys Ala Leu Leu Leu Leu His Leu Ser Pro Gly Ala Ala Gly
        595   600   605

Ser Ser Arg Val Lys His Gln Cys His Gln Cys Ser Phe Thr Thr Pro
    610   615   620

Asp Val Asp Val Leu Leu Phe His Tyr Glu Ser Val His Glu Ser Gln
625   630   635   640

Ala Ser Asp Val Lys Gln Glu Ala Asn His Leu Gln Gly Ser Asp Gly
                645   650   655

Gln Gln Ser Val Lys Glu Ser Lys Glu His Ser Cys Thr Lys Cys Asp
            660   665   670

Phe Ile Thr Gln Val Glu Glu Glu Ile Ser Arg His Tyr Arg Arg Ala
    675   680   685

His Ser Cys Tyr Lys Cys Arg Gln Cys Ser Phe Thr Ala Ala Asp Thr
    690   695   700

Gln Ser Leu Leu Glu His Phe Asn Thr Val His Cys Gln Glu Gln Asp
705   710   715   720

Ile Thr Thr Ala Asn Gly Glu Glu Asp Gly His Ala Ile Ser Thr Ile
              725   730   735

Lys Glu Glu Pro Lys Ile Asp Phe Arg Val Tyr Asn Leu Leu Thr Pro
              740   745   750

Asp Ser Lys Met Gly Glu Pro Val Ser Glu Ser Val Val Lys Arg Glu
              755   760   765

Lys Leu Glu Glu Lys Asp Gly Leu Lys Glu Lys Val Trp Thr Glu Ser
    770   775   780

Ser Ser Asp Asp Leu Arg Asn Val Thr Trp Arg Gly Ala Asp Ile Leu
785   790   795   800

Arg Gly Ser Pro Ser Tyr Thr Gln Ala Ser Leu Gly Leu Leu Thr Pro
              805   810   815

Val Ser Gly Thr Gln Glu Gln Thr Lys Thr Leu Arg Asp Ser Pro Asn
              820   825   830

Val Glu Ala Ala His Leu Ala Arg Pro Ile Tyr Gly Leu Ala Val Glu
    835   840   845

Thr Lys Gly Phe Leu Gln Gly Ala Pro Ala Gly Gly Glu Lys Ser Gly
    850   855   860

Ala Leu Pro Gln Gln Tyr Pro Ala Ser Gly Glu Asn Lys Ser Lys Asp
865   870   875   880

Glu Ser Gln Ser Leu Leu Arg Arg Arg Arg Gly Ser Gly Val Phe Cys
              885   890   895

Ala Asn Cys Leu Thr Thr Lys Thr Ser Leu Trp Arg Lys Asn Ala Asn

```
              900               905                910


Gly Gly Tyr Val Cys Asn Ala Cys Gly Leu Tyr Gln Lys Leu His Ser
     915                920                925


Thr Pro Arg Pro Leu Asn Ile Ile Lys Gln Asn Asn Gly Glu Gln Ile
  930                935                940


Ile Arg Arg Arg Thr Arg Lys Arg Leu Asn Pro Glu Ala Leu Gln Ala
945                950                955                960


Glu Gln Leu Asn Lys Gln Gln Arg Gly Ser Asn Glu Glu Gln Val Asn
                965                970                975


Gly Ser Pro Leu Glu Arg Arg Ser Glu Asp His Leu Thr Glu Ser His
          980                985                990


Gln Arg Glu Ile Pro Leu Pro Ser   Leu Ser Lys Tyr Glu   Ala Gln Gly
       995                1000                1005


Ser Leu   Thr Lys Ser His Ser   Ala Gln Gln Pro Val   Leu Val Ser
     1010                1015                1020


Gln Thr   Leu Asp Ile His Lys   Arg Met Gln Pro Leu   His Ile Gln
     1025                1030                1035


Ile Lys   Ser Pro Gln Glu Ser   Thr Gly Asp Pro Gly   Asn Ser Ser
     1040                1045                1050


Ser Val   Ser Glu Gly Lys Gly   Ser Ser Glu Arg Gly   Ser Pro Ile
     1055                1060                1065


Glu Lys   Tyr Met Arg Pro Ala   Lys His Pro Asn Tyr   Ser Pro Pro
     1070                1075                1080


Gly Ser   Pro Ile Glu Lys Tyr   Gln Tyr Pro Leu Phe   Gly Leu Pro
     1085                1090                1095


Phe Val   His Asn Asp Phe Gln   Ser Glu Ala Asp Trp   Leu Arg Phe
     1100                1105                1110


Trp Ser   Lys Tyr Lys Leu Ser   Val Pro Gly Asn Pro   His Tyr Leu
     1115                1120                1125
```

```
Ser His  Val Pro Gly Leu Pro  Asn Pro Cys Gln Asn  Tyr Val Pro
     1130              1135               1140


Tyr Pro  Thr Phe Asn Leu Pro  Pro His Phe Ser Ala  Val Gly Ser
     1145              1150               1155


Asp Asn  Asp Ile Pro Leu Asp  Leu Ala Ile Lys His  Ser Arg Pro
     1160              1165               1170


Gly Pro  Thr Ala Asn Gly Ala  Ser Lys Glu Lys Thr  Lys Ala Pro
     1175              1180               1185


Pro Asn  Val Lys Asn Glu Gly  Pro Leu Asn Val Val  Lys Thr Glu
     1190              1195               1200


Lys Val  Asp Arg Ser Thr Gln  Asp Glu Leu Ser Thr  Lys Cys Val
     1205              1210               1215


His Cys  Gly Ile Val Phe Leu  Asp Glu Val Met Tyr  Ala Leu His
     1220              1225               1230


Met Ser  Cys His Gly Asp Ser  Gly Pro Phe Gln Cys  Ser Ile Cys
     1235              1240               1245


Gln His  Leu Cys Thr Asp Lys  Tyr Asp Phe Thr Thr  His Ile Gln
     1250              1255               1260


Arg Gly  Leu His Arg Asn Asn  Ala Gln Val Glu Lys  Asn Gly Lys
     1265              1270               1275


Pro Lys  Glu
     1280



<210>   3
<211>   1203
<212>   DNA
<213>   Homo sapiens

<400>   3
atggccgagc tgcgcctgaa gggcagcagc aacaccacgg agtgtgttcc cgtgcccacc      60

tccgagcacg tggccgagat cgtgggcagg caaggctgca agattaaggc cttgagggcc     120

aagaccaaca cctacatcaa gacaccggtg aggggcgagg aaccagtgtt catggtgaca     180
```

```
gggcgacggg aggacgtggc cacagcccgg cgggaaatca tctcagcagc ggagcacttc    240

tccatgatcc gtgcctcccg caacaagtca ggcgccgcct ttggtgtggc tcctgctctg    300

cccggccagg tgaccatccg tgtgcggggtg ccctaccgcg tggtggggct ggtggtgggc    360

cccaaagggg caaccatcaa gcgcatccag cagcaaacca acacatacat tatcacacca    420

agccgtgacc gcgaccccgt gttcgagatc acgggtgccc caggcaacgt ggagcgtgcg    480

cgcgaggaga tcgagacgca catcgcggtg cgcactggca agatcctcga gtacaacaat    540

gaaaacgact tcctggcggg gagccccgac gcagcaatcg atagccgcta ctccgacgcc    600

tggcgggtgc accagcccgg ctgcaagccc ctctccacct tccggcagaa cagcctgggc    660

tgcatcggcg agtgcggagt ggactctggc tttgaggccc cacgcctggg tgagcagggc    720

ggggactttg gctacggcgg gtacctcttt ccgggctatg gcgtgggcaa gcaggatgtg    780

tactacggcg tggccgagac tagcccccccg ctgtgggcgg gccaggagaa cgccacgccc    840

acctccgtgc tcttctcctc tgcctcctcc tcctcctcct cttccgccaa ggcccgcgct    900

gggcccccgg gcgcacaccg ctcccctgcc acttccgcgg gacccgagct ggccggactc    960

ccgaggcgcc ccccgggaga gccg
```